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A NEW SPECIES OF *ELEUTHERODACTYLUS*
(AMPHIBIA: LEPTODACTYLIDAE) FROM CUBA

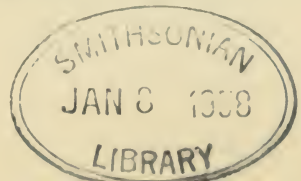
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Through the auspices of the National Science Foundation, the writer spent the period of June 15 to September 2, 1957, studying the Cuban herpetofauna. The major emphasis of the collections made was upon the Leptodactylid genus *Eleutherodactylus*, and a complete report upon the species of this genus will be made after the study has completed its two year course. However, rather than delay in describing new forms until the monograph is completed, it seems preferable to publish such descriptions promptly. The present paper deals with one such obviously new form.

In a recent paper, I (1957, in press) have summarized the present status of the 26 forms of *Eleutherodactylus* which are known from Cuba. These forms are conveniently, and for the most part correctly, separated into four major groups, which were originally defined by Dunn (1926, p. 210), and I (*op. cit.*) have again defined these groups and have added the forms, described since Dunn's work, in their proper places. Thus, there seems little point in restating these basic premises in the present paper, and the reader is referred to the papers mentioned above.

During the summer of 1957, the first 21 days were spent collecting in the vicinity of San Vicente, Pinar del Río Province, in the company of Messrs. John R. Feick and William H. Gehrmann, Jr.; during parts of the same period I was assisted by Mr. Dennis R. Paulson and Dr. Robert S. Howard. To all these co-workers I wish to express my sincere thanks for their gracious assistance and pleasant company. From San Vicente, several side trips to various other portions of Pinar del Río Province were made. It had been one of our objectives to visit the Cueva de Santo Tomás; this cave system is one of the largest underground systems in Cuba as well as in the New World, having seven and one half miles of explored passages, and its exploration and reconnaissance have been due principally to the efforts of Dr. Antonio Nuñez Jiménez and Ing. Kenneth R. Symington (1955). Ing. Symington agreed to take us to the cave, and a visit was made, under great difficulty because of steady downpour and very inclement weather, on June 22, 1957. The party was made up of Ing. Symington, Messrs. Feick, Gehrmann, Paulson, and myself.



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The Cueva de Santo Tomás is located along the southern escarpment of the Sierra de los Organos, 10 kilometers north of the town of Cabezas, Pinar del Río Province. During the dry season it is possible to travel by car on unimproved roads to within a very short distance of the cave mouths, but this is impossible during the rainy season. The Cueva de Santo Tomás is actually a series of three cavern levels, presumably due to successive penetration of the montane mass, locally known as a *mogote*, by the Santo Tomás River. Each of these levels pierces the *mogote* and proceeds independently through it, opening into a small intermontane valley (called locally an *olla*) on one side, and then continuing out the far side of the *olla* through the remaining portion of the outlier. Although the caves penetrate two additional *ollas*, our collecting was limited to the first.

The *olla* is a very steep-sided depression, with access only from the caves; local *guajiros* have recently penned domestic animals in the valley, and these have been introduced down an excessively steep slope at the northwestern end. The maximum length and breadth of the valley are about 500 feet, with the escarpment walls rising to a height of approximately 80 feet. The bases of the walls are buried in much-weathered talus, and the vegetation, composed of deciduous trees and palms, is typical of the *mogote* section of the Sierra de los Organos. The floor of the valley is relatively smooth, somewhat rocky in portions, but principally covered with soil which supports a moderately dense growth of grasses, herbs, and shrubs.

Several species of *Eleutherodactylus* were collected in the *olla*; the weather, which was extremely wet, was especially suitable for the diurnal activity of amphibians. Reptiles did not seem to be particularly abundant, although anoles of several species, *Cadea blanoides*, and *Alsophis angulifer* were taken. Among the frogs collected is one very large individual which represents a new species, as well as being the first member of a group of *Eleutherodactylus* new to the island of Cuba. I take great pleasure in naming this species for my good friend, Ing. Kenneth A. Symington, without whose persistence and fellowship we would never have succeeded in either visiting the Cueva de Santo Tomás, nor of securing the interesting lot of material from western Pinar del Río Province, as

Eleutherodactylus symingtoni, new species

Type: American Museum of Natural History (A.M.N.H.) No. 60801, taken June 22, 1957, under a rock on the side of the first *olla*, Cueva de Santo Tomás, 10 kilometers north of Cabezas, Pinar del Río Province, Cuba, by William H. Gehrman, Jr. Original number 1799.

Distribution: known only from the type locality.

Diagnosis: A large *Eleutherodactylus* characterized by extremely rugose dorsum, absence of digital discs, short vomerine series, dark brown dorsal and ventral coloration, and orange vermiculations on anterior, dorsal, and posterior surfaces of thighs, and interior surface of crus.

Description of type: An adult male, with the following measurements (all measurements in millimeters): snout-vent length, 61.3; head length (snout to posterior border of tympanum), 24.1; greatest width of head, 26.2; longitudinal diameter of eye, 6.9; longitudinal diameter of

tympanum, 4.4; naris to anterior corner of eye, 8.0; femur, 28.7; tibia, 30.0; length of fourth toe, 27.7. Head slightly broader than distance from snout to posterior border of tympanum; snout somewhat truncate, with nares prominent at anterior end of canthus rostralis; diameter of eye less than distance from naris to anterior corner of eye; interorbital space 7.1, a bit greater than diameter of eye, but roughly comparable; diameter of tympanum less than diameter of eye; distance from tympanum to eye equal to diameter of tympanum; tympanum oval, its vertical diameter greater (5.8) than its horizontal (4.4). Digital discs absent. Fingers slender, unwebbed, 3-4-1-2 in order of decreasing length; subarticular tubercles very well developed. Toes long and slender, unwebbed, 4-3-5-2-1 in order of decreasing length. Heels do not touch when legs are held with femora at right angles to body axis. Dorsum extremely rugose, with rugosities extending from snout, over lores, upperjaw, dorsal surfaces of forelimbs, back, ventrally on sides to a line drawn between insertions of fore- and hindlimbs, dorsal surfaces of thighs, crus, and hindfoot. Throat with many scattered rugosities, stopping at level of forelimb insertions; venter smooth with belly disc feebly developed. Dorsal rugosities largest on head and snout, forming two large and two small tubercles on canthal line, these tubercles stout and truncate; rugosities on remainder of dorsal surfaces of about equal size, more or less regularly spaced, giving a very rough appearance; upper eyelids heavily tuberculate. Posterior and ventral surfaces of thighs covered with large, flattened, pavement-like granules. Tongue oval, possibly slightly mucronate in life, free behind, its greatest width about two-thirds of that of the floor of the mouth. Vomerine teeth in two short, stout, straight series, extending from the inner margin of the choanae medially, separated from each other by a distance slightly less than the length of either of the series, and separated from choanae by a distance equal to the length of either of the series.

Coloration of type (based on color notes taken in the field and on Kodachrome photographs): dorsum dark brown (Pl. 16, A10; color designations from Maerz and Paul, 1950) with black vermiculations and reddish scapular W, outlined in black; a transverse very obscure dusky reddish scapular W, outlined in black; a transverse very obscure dusky yellowish band across dorsum anterior to hindlimbs; one pair of faintly yellow postscapular spots on each side at level of dorsolateral line; anterior, dorsal, and posterior surfaces of thighs brown with dull orange (Pl. 6, 12E) vermiculations, which occur likewise on inner face of crus; an orange V, its apex above vent, extending through groin onto sides for a very short distance, and sending also an orange line posteriorly onto dorsal surface of thigh to become mingled with orange pigment on that member. Dorsal surface of crus with three transverse, poorly defined blackish bands; dorsal surface of foot with two or three poorly defined blackish bands; ground color of crus and foot light brown. Forelimbs with one or two blackish bands on antibrachium, none on brachium; fingers mottled with dark brown and pale tan. Lips spotted with black on dark brown ground color; throat dark brown with scattered small white dots which are tips of rugosities. Venter very dark brown, with many fine white dots, giving a mottled appearance; ventral dots concentrated in groin, which appears mottled, and on sides, with a distinct break between dorsal and ventral pigmentation; ventral surfaces of fore-

and hindlimbs brown mottled with white, the white dots on the hindlimbs larger and more prominent.

Remarks: *E. symingtoni* cannot be placed in any of the known groups (*auriculatus*, *dimidiatus*, *varleyi*, *ricordi*) of Cuban eleutherodactyli. Of these groups, only *auriculatus* and *varleyi* have short vomerine series; however, the *auriculatus* group has well developed digital discs and a rugose belly (both of which *symingtoni* lacks), and *varleyi* is characterized by a pectoral vocal sac in males, and by a dorso-lateral glandular fold and rugose belly as well, all of which characters do not occur in *symingtoni*. Comparison with other members of the genus in Cuba is unnecessary; only *E. greyi* Dunn is known to be equally as large, but this species is a member of the *ricordi* group and no confusion between the two forms should be encountered.

The affinities of *E. symingtoni* with other West Indian members of the genus are unknown. There are no eleutherodactyli on Puerto Rico, Hispaniola, Jamaica, or the Bahamas which display the characters of *symingtoni*, as well as the large size. Certainly its relatives are to be looked for not in the Bahamas (which are inhabited only by *E. ricordi planirostris* Cope and *E. r. rogersi* Goin), nor in Puerto Rico. I am unable to associate *E. symingtoni* with any of the Hispaniolan species, which have been described by Cochran (1941), nor with any of the Jamaican forms, which have been worked by Lynn (1940) and others. It appears that *E. symingtoni* is a species endemic to the Sierra de los Organos in Pinar del Río, and its affinities with other species on the West Indies are unknown. Collections elsewhere in the Sierra de los Organos yielded no additional specimens of this new species, although many other frogs were taken. Since *E. symingtoni* differs so trenchantly from all other Cuban eleutherodactyli, and cannot be placed in any other of the four major groups, it is suggested that this species be made the sole member of the *symingtoni* group. It is hoped that collectors in Pinar del Río will secure additional specimens of this unique species.

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